

EXPRESS MAIL RECEIPT NO.: EV 318623698 US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Philippe Armangau, et al.

Group Art Unit: Unknown

Serial No.:

Examiner: Unknown

Filed: June 25, 2003

Atty. Dkt. No.: 10830.0095.000000

For: Replication of Snapshot Using a File
System Copy Differential

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Sir:

Pursuant to the duty of disclosure under 37 C.F.R. § 1.56, it is respectfully requested that this Information Disclosure Statement be entered and the documents listed on attached Form PTO-1449 be considered by the Examiner and made of record. Copies of the listed documents required by 37 C.F.R. § 1.98(a)(2) are enclosed for the convenience of the Examiner.

In accordance with 37 C.F.R. §§ 1.97(g),(h), this Information Disclosure Statement is not to be construed as a representation that a search has been made, and is not to be construed to be an admission that the information cited is, or is considered to be, material to patentability as defined in 37 C.F.R. § 1.56(b).

The present application is assigned to EMC Corporation.

The subject matter of FIGS. 1-19 of the present application also appears in Suchitra Raman, et al., Ser. 10/147,751 filed May 16, 2002, entitled "Replication of Remote Copy Data for Internet Protocol (IP) Transmission," and assigned to EMC Corporation.

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Armangau, et al.

The EMC replication technology was incorporated into an EMC product known as the "Celerra Replicator" and offered to the public beginning in September of 2002. See Ref. C7, EMC Celerra Replicator, EMC Corporation, Hopkinton, MA, Oct. 2002 (5 pages).

The subject matter of FIGS. 41 and 42 of the present application was incorporated into an EMC product known as "Smart Snap" and offered to the public beginning in September of 2002. Various aspects of EMC's snapshot copy technology are also disclosed in the following patent applications assigned to EMC Corporation: Philippe Armangau et al., Ser. 10/213,242 filed Aug. 6, 2002, entitled "Organization of Multiple Snapshot Copies in a Data Storage System;" Philippe Armangau et al., Ser. 10/213,335 filed Aug. 6, 2002 entitled "Instantaneous Restoration of a Production Copy from a Snapshot Copy in a Data Storage System;" and Philippe Armangau et al., Ser. 10/213,241 filed Aug. 6, 2002 entitled "Data Storage System Having Meta Bit Maps for Indicating Whether Data Blocks are Invalid in Snapshot Copies."

Respectfully submitted,



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750 Bering Drive
Houston, Texas 77057-2198

Date: 25 June 2003

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Form PTO-1449 (modified)	Atty. Docket No. 10830.0095.NPUS00	Serial No.
List of Patents and Publications for Applicant's INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)	Applicant Armangau, et al..	
	Filing Date:	Group:

U.S. Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Name	Class	Sub Class	Filing Date of App.
	A1	6,434,681	08/13/2002	Armangau	711	162	12/02/1999
	A2	6,353,878	03/05/2002	Dunham	711	162	08/13/1998
	A3	6,101,497	08/08/2000	Ofek	707	10	04/25/1997
	A4	6,076,148	06/13/2000	Kedem	711	162	12/26/1997
	A5	6,035,412	03/07/2000	Tamer et al.	714	6	03/19/1997
	A6	5,974,563	10/26/1999	Beeler, Jr.	714	5	10/02/1998
	A7	5,901,327	05/04/1999	Ofek	395	825	03/17/1997
	A8	5,893,140	04/06/1999	Vahalia et al.	711	118	11/13/1996
	A9	5,835,953	11/10/1998	Ohran	711	162	11/08/1996
	A10	5,615,329	03/25/1997	Kern et al.	395	182.04	02/22/1994
	A11	5,596,706	01/21/1997	Shimazaki et al.	395	182.04	08/10/1994
	A12	5,434,994	07/18/1995	Shaheen et al.	395	500	05/23/1994

Foreign Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Country	Class	Sub Class	Translation Yes/No
✓	B1	0 674 263 A1	09/27/95	EP	G06F	11/20	
✓	B2	0 672 985 A1	09/20/95	EP	G06F	11/14	
	B3						

Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

Exam. Init.	Ref. Des.	Citation
✓	C1	Uresh Vahalia, <u>UNIX Internals: The new frontiers, Chapter 9, "File System Implementations,"</u> Prentice-Hall, Inc., Upper Saddle River, New Jersey, 1996, pp. 261-289.

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DATE CONSIDERED:

EXAMINER: INITIAL IF REFERENCE CONSIDERED, WHETHER OR NOT CITATION IS IN CONFORMANCE WITH MPEP609; DRAW LINE THROUGH CITATION IF NOT IN CONFORMANCE AND NOT CONSIDERED. INCLUDE COPY OF THIS FORM WITH NEXT COMMUNICATION TO APPLICANT.

INFORMATION DISCLOSURE STATEMENT — PTO-1449 (MODIFIED)

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Exam. Init.	Ref. Des.	Citation
✓	C2	D.L. Burkes and R.K. Treiber, "Design Approaches for Real-Time Transaction Processing Remote Site Recovery," Digest of Papers in Spring COMPCON90, Feb. 26-March 2, 1990, <i>Thirty-Fifth IEEE Computer Society International Conference</i> , San Francisco, CA, pp. 568-572.
✓	C3	"Network Data Management Protocol (NDMP)," http://www.ndmp.org/info/ ; NDMP White Paper, http://www.ndmp.org/info/technology/wp.html ; "Protocol Specification Summary, Document Version: 1.7.2S," http://www.ndmp.org/info/spec_summary.html ; "Legato Systems Embraces the NDMP Standard: Legato Networker Software to be NDMP Compliant in Q3," http://www-ftp.legata.com/News/Press/PR209.html ; published at least as early as 10/11/99, 17 pages.
✓	C4	R. Stager and D. Hitz, Internet Draft filename " draft-stager-iquard-netapp-backup-05.txt ," <i>Network Data Management Protocol (NDMP)</i> , last update 10/12/99, pp. 1-73.
✓	C5	Koop, P., "Replication at Work. (four companies use Oracle and Sybase replication servers to solve business problems)," <i>DBMS</i> , vol. 8, No. 3, p. 54(4), March 1995.
✓	C6	Remote Mirroring Technical White Paper, Copyright 1994-2002 Sun Microsystems, published at least as early as May 17, 2002 at sun.com, 25 pages.
✓	C7	EMC TechNote: Celerra Replicator, EMC Corporation, Hopkinton, MA, Oct. 2002 (5 pages).
✓	C8	EMC TimeFinder Product Description Guide, EMC Corporation, Hopkinton, MA, 1998, pp. 1-31.
✓	C9	Leveraging SnapView/IP in Oracle8i Environments with the CLARiiON IP4700 File Server, Engineering White Paper, EMC Corporation, Hopkinton, MA, Feb. 13, 2002, pp. 1-16.
✓	C10	Using EMC CLARiiON FC4700 and SnapView with Oracle 8i, Engineering White Paper, EMC Corporation, Hopkinton, MA, March 4, 2002, pp. 1-22.
✓	C11	Disaster Recovery Guidelines for using HP SureStore E XP256, Continuous Access XP with Oracle Databases Rev 1.03, Hewlett-Packard Company, Palo Alto, CA, May 2000, pp. 1-28.
✓	C12	Enterprise Volume Manager and Oracle8 Best Practices, Compaq White Paper, Compaq Computer Corporation, Dec. 1999, pp. 1-11.
✓	C13	VERITAS Database Edition for Oracle, Guidelines for Using Storage Checkpoint and Storage Rollback with Oracle Databases, Veritas Software Corporation, Mountain View, CA, August 2001, pp. 1-16.
✓	C14	VERITAS Volume Replication and Oracle Databases, A Solutions White Paper, Veritas Software Corporation, Mountain View, CA, May 29, 2000, pp. 1-31.

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Exam. Init.	Ref. Des.	Citation
	C15	Nabil Osorio and Bill Lee, Guidelines for Using Snapshot Storage Systems for Oracle Databases, Oracle Corporation, Oct. 2001, pp. 12.

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